

REMARKS/ARGUMENTS

This case has been carefully reviewed and analyzed in view of the Official Action dated 5 April 2005. Responsive to the rejections made by the Examiner, Claims 1- 20 have been amended and are now clearer in their respective recitations.

In the second paragraph of the Official Action, it is stated “Claims 1-2, 4-5, 8-21 are rejected under 35 U.S.C. 103(a) as obvious over Islam et al. (US 5,950,230) in view of Patel et al. (US 6,799,284)”. However, only Claims 1-20 are pending. Applicant wishes only to point out the error.

In setting forth the rejections of various Claims, the Examiner observed that Islam, et al. (US Patent number 5,950,230; hereinafter “Islam”) discloses a disk drive managing system for “at least one disk-array”. It is to be noted, however, that the system of Islam is limited to managing the disk drives of a *single* disk-array, i.e., a disk managing system for at *most* one disk-array. The same is true for the secondarily cited Patel, et al. reference (US Patent number 6,799,284; hereinafter “Patel”).

The invention of the subject Patent Application provides a disk drive managing method in a multiple disk-array system in which is included “an interface operable to access a plurality of disk-arrays coupled thereto, where data is distributed across each disk-array of said plurality of disk-arrays independently of said distribution across other disk-arrays of said plurality of disk-arrays”. Thus,

as disclosed by the subject Application and in accordance with the invention described thereby, disk-arrays having different RAID levels may be incorporated into the same multiple disk-array system.

Among the beneficial features of the present invention is the incorporation of an array configuration record stored on “a disk drive coupled to a corresponding disk-array... said array configuration including an array signature and a plurality of serial check sums, each of said plurality of serial check sums corresponding to a disk drive belonging to said corresponding disk-array”. The serial check sum is thus the same for every disk drive in a corresponding disk-array and “reading said plurality of serial check sums from another disk drive coupled to said corresponding disk-array” can be used in “determining if said disk-array ... is recorded as one of the plurality of disk-arrays coupled to said interface”, regardless of whether the disk drive being tested is recorded in the serial check sum of the disk-array or not.

The full combination of these and other features now more clearly recited by Applicants' pending Claims is nowhere disclosed by the references cited by the Examiner. Since, as the Examiner observed, Islam discloses a disk-array system containing at least one disk-array, which, as stated above, is merely a single array, the reference does not disclose, or even consider “a plurality of disk-arrays ..., where data is distributed across each disk-array of said plurality of disk-arrays independently of said distribution across other disk-arrays of said plurality of disk-

arrays”. Obviously, as Islam concerns itself with the management of a single RAID array, the mechanisms for contemporaneous management of disk-arrays of different levels, e.g., RAID 0, RAID 1, and RAID 0+1, are not contemplated by the reference.

As was readily acknowledged by the Examiner, the Islam system does not implement the use of a check sum and, as such, does not disclose, or even suggest, the steps of “reading said plurality of serial check sums of another disk drive coupled to said corresponding disk-array” and “determining if said disk-array corresponding to said plurality of serial check sums read in said serial check sums reading step is recorded as one of said plurality of disk-arrays coupled to said interface”, as is recited by Applicants’ pending Claims. This is again due to the applicability of Islam being limited to a single disk-array. That is to say, that since Islam is directed to management tasks within a single disk-array, there is no need to ensure that a “disk-array ... is recorded as one of said plurality of disk-arrays coupled to said interface”.

Given such contrary teachings of the primarily cited Islam reference, the disclosures of the secondarily cited Patel reference are found to be quite ineffectual to the present patentability analysis. Patel was cited by the Examiner to show the use of a check sum. But, not only is Patel directed to a single disk-array system, it is directed to disk-arrays having striped data distribution across disk drives in the array. Nowhere is it disclosed in Patel “where data is distributed

across each disk-array of said plurality of disk-arrays independently of said distribution across other disk-arrays of said plurality of disk-arrays”. Even when that shortcoming is overlooked, a multiple disk-array of even just striped arrays is beyond the teachings of Patel. As such, Patel does not disclose, or even suggest, “reading said plurality of serial check sums of another disk drive coupled to said corresponding disk-array” and “determining if said disk-array corresponding to said plurality of serial check sums read in said serial check sums reading step is recorded as one of said plurality of disk-arrays coupled to said interface”.

In the Official Action, the Examiner stated that, “It would have been obvious to one having ordinary skill in the art to realize that header information of Islam should also contain such information as disclosed by Patel in order to keep track of the *information related to the disk*” (emphasis added). However, even when the Examiner’s argument is considered to have merit, since neither Islam nor Patel contemplates a multiple disk-array system configuration, the combination of Islam and Patel does not disclose the check sum being used to keep track of *information related to a disk-array*, as does the invention of the subject Patent Application, i.e., “determining if said disk-array corresponding to said plurality of serial check sums read in said serial check sums reading step is recorded as one of said plurality of disk-arrays coupled to said interface”.


All of the pending Claims of the subject Patent Application, as now amended, either by direct recitation or by inherency from its dependency on a base

Claim, include the limitations of “providing an interface operable to access a plurality of disk-arrays coupled thereto, where data is distributed across each disk-array of said plurality of disk-arrays independently of said distribution across other disk-arrays of said plurality of disk-arrays”, “reading said plurality of serial check sums of another disk drive coupled to said corresponding disk-array” and “determining if said disk-array corresponding to said plurality of serial check sums read in said serial check sums reading step is recorded as one of said plurality of disk-arrays coupled to said interface”. None of the prior art references cited by the Examiner disclose or suggest these limitations, even when the references are taken in combination. Thus, it is believed that the invention of the subject Patent Application is neither anticipated nor made obvious by the references cited.

The remaining reference cited by the Examiner, but not used in the rejection of Claims, has been reviewed, but is believed to be further remote from the matter of the subject Patent Application than the references used in the rejections, when patentability considerations are taken into account.

It is now believed that the subject Patent Application is in condition for allowance, and such action is respectfully requested.

Respectfully submitted,
For: ROSENBERG, KLEIN & LEE

A handwritten signature in black ink, appearing to read "David R. Wood", with a stylized flourish at the end.

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